

**SONY®**

# White paper

July 2014



Xperia™ C3 Dual  
S55u

Note: Screen images are simulated.

# Purpose of this document

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Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

## Document history

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### Version

July 2014	First released version	Version 1
December 2014	Second released version	Version 2

## Sony Mobile Developer World

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For the latest technical documentation and development tools, go to [www.sonymobile.com/developer](http://www.sonymobile.com/developer).

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# Product overview

## Highlights

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- 5 MP wide-angle front camera with soft flash and Superior Auto for perfect ‘selfies’ and HD video chat
- Xperia camera apps – new Portrait Retouch and AR Effect specifically designed for selfie
- 8 MP camera with Exmor RS™ and Xperia™ camera apps
- 5.5” 720p HD IPS display
- 4G, Snapdragon Quad-core 1.2 GHz processor with 1GB RAM, and 8GB ROM
- Powerful 2500 mAh battery with Battery STAMINA Mode

### **Fit more in the frame with our best ever selfie cam**

At a club with friends. Bored at work. Posing with your pet dog. There’s always time for a selfie, or a groupie. With the Xperia™ C3 Dual, you can capture your best poses by double tapping the back cover or using the smile detection, then easily share with friends. The 5 MP wide-angle front camera (25mm with 80 degree field of view) gets more into the frame, whether it’s everyone in a holiday groupie, or you in that new outfit. Furthermore, with the unique LED flash in the front you can capture flattering selfies either day or night!

The Xperia™ C3 Dual comes preloaded with Xperia™ camera apps to make your selfies even better. Use the AR Effect to add real-time fun graphics and animations, like masks, horror faces and comic laser light to your selfies. With the new Portrait retouch feature, you can choose from 10 different beauty styles, which include four natural looks for guys, and retouch portraits of two people. Then use the amazing real-time effects to transform your look with the options including real-time makeover, magic beam for eye reflection changes, and Deco frame.

### **Enjoy Sony camera expertise**

Created with Cyber-shot’s leading camera expertise, the Xperia™ C3 Dual has an impressive 8 MP camera that features an Exmor RS™ for mobile image sensor, allowing you to take exceptional pictures even in challenging lighting conditions. And HDR for photos and video means you can shoot beautiful photos, even when the subject is backlit. And thanks to SteadyShot™, all of them will come out smooth and distortion-free. With Superior Auto mode that automatically activates HDR and noise reduction when needed, you can just relax and let the camera do all the work instead of focusing on settings. And don’t forget the powerful 5 MP front camera is also equipped with an auto scene recognition function, working together with the LET flash for you to capture best selfies and enjoy great video chat any time any where!

### **Superior Auto – on both main and front cameras**

From illuminated night views to backlight selfies, Superior Auto recognises four scene types on the Xperia™ C3 Dual’s front camera and up to 36 scenes by the main camera and adjusts the settings automatically, to help you get the best photos anywhere, in any light. As the default camera mode, Superior Auto turns HDR on or off depending on your scene. HDR mode takes multiple shots with varied exposures and then merges them together to make your photos look natural – even in backlit conditions.

### **Portrait retouch v.2– style your close-ups**

Make your subjects more photogenic than ever before. This fun app features real-time makeover, Deco frame options and magic eye beam effect. With the new Portrait retouch feature, you can choose from 10 different beauty styles, which include four natural looks for guys, and retouch portraits of two people.

## **AR Effect – a different angle to your photos and videos**

Switch your camera to AR Effect mode and enjoy the new sound effects while adding fun animations to your photos, videos and selfies. Ranging from dinosaurs to ocean-life. These fully customisable themes can be easily edited, so make your dinosaurs roar when you touch them or if there are too many fish in the sea, just remove a few.

# Facts – dimensions, weight, performance and networks

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<b>Operating system</b>	Google™ Android™ 4.4 (KitKat)
<b>Processor</b>	1.2 GHz Qualcomm MSM8926 Quad Core
<b>GPU</b>	Adreno 305
<b>Size</b>	156.2 x 78.7 x 7.6 mm
<b>Weight</b>	149.7 grams
<b>Available colours</b>	Black White Mint
<b>SIM card</b>	micro SIM
<b>Main screen</b>	
Colours	16,777,216 colour TFT
Resolution	720x1280 pixels
Size (diagonal)	5.5 inches
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
<b>Memory</b>	
RAM	1 GB
Flash memory	8 GB*
Expansion slot	microSD™ card, up to 32 GB
<b>Camera</b>	
Camera resolution	8 MP
Digital zoom	16x
Photo light	Yes – Pulsed LED
Video recording	Yes – Full HD 1080p
Front Camera	Yes – HD 720p for video chat and 5 MP for camera capture
<b>Sensors</b>	
Accelerometer	Yes
Proximity sensor	Yes
Ambient light sensor	Yes

Magnetometer	Yes
<b>Networks</b>	
S55u	SIM 1: TD LTE (Band 41) FDD LTE (Bands 1, 3, 7) WCDMA (Bands 1, 2, 5, 8) GSM GPRS/EDGE 850, 900, 1800, 1900 MHz SIM 2: GSM (Bands 850, 900, 1800, 1900 MHz)
<b>Data transfer speeds</b>	
GSM GPRS	Up to 107 kbps
GSM EDGE	Up to 296 kbps
HSUPA (upload)	Cat 6, up to 5.76 Mbps
HSDPA (download)	Cat 24, up to 42.2 Mbps
<b>Talk time</b> (GSM)	Up to 11 hours**
<b>Standby time</b> (GSM)	Up to 1040 hours**
<b>Talk time</b> (WCDMA)	Up to 25 hours**
<b>Standby time</b> (WCDMA)	Up to 960 hours**
<b>Standby time</b> (TD LTE)	Up to 790 hours**
<b>Standby time</b> (FDD LTE)	Up to 862 hours**
<b>Music listening time</b>	Up to 65 hours**
<b>Video playback time</b>	Up to 13.5 hours**
<b>Battery (Embedded)</b>	2500 mAh minimum

\* Memory comprises approximately 2.9 GB of firmware, plus 5.1 GB of “Internal storage” for music, pictures and movies, and downloaded applications and their data.

\*\* Values are according to GSM Association Battery Life Measurement Technique as performed in controlled laboratory conditions. Actual time may vary.

NOTE: The Battery performance may vary depending on network conditions and configurations, and device usage.

NOTE: Performance metrics measured under laboratory conditions.

## Categorised feature list

 <p><b>Camera</b></p> <ul style="list-style-type: none"> <li>Superior Auto both front and back camera</li> <li>Wide view front camera</li> <li>Magic beam</li> <li>Front flash LED</li> <li>8 megapixel camera</li> <li>16x digital zoom</li> <li>Auto focus</li> <li>AR Effect</li> <li>Burst mode</li> <li>Creative effect</li> <li>HDR for photos and movies</li> <li>Face detection</li> <li>Flash/Pulsed LED</li> <li>Flash/Photo light</li> <li>Front-facing camera (5 MP 720p)</li> <li>Geotagging</li> <li>HD video recording (1080p)</li> <li>Image stabiliser</li> <li>Object tracking</li> <li>Picture Effect</li> <li>Portrait retouch</li> <li>Post editing</li> <li>Quick Launch</li> <li>Red-eye reduction</li> <li>Self-timer</li> <li>Send to web</li> <li>Smile Shutter™</li> <li>Sony Exmor RS® for main camera</li> <li>Image sensor</li> <li>Steady shoot</li> <li>Sweep Panorama</li> <li>Time shift</li> <li>Touch capture</li> <li>Touch focus</li> <li>White balance</li> </ul>	 <p><b>Music</b></p> <ul style="list-style-type: none"> <li>Sony Surround Sound technology (VPT)</li> <li>Album art</li> <li>Bluetooth® stereo (aptX®, A2DP)</li> <li>ClearAudio+</li> <li>Clear Bass™</li> <li>Clear Phase™</li> <li>Clear stereo</li> <li>Dynamic normalizer</li> <li>Low power audio playback**</li> <li>Music tones (MP3/AAC)</li> <li>SensMe™</li> <li>TrackID™ music recognition*</li> <li>Walkman® application</li> <li>xLOUD™ Experience</li> </ul>	 <p><b>Internet</b></p> <ul style="list-style-type: none"> <li>Bookmarks</li> <li>Pan &amp; zoom</li> <li>Sony Select</li> <li>Xperia™ Home</li> <li>Web browser (WebKit™)*</li> </ul>
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 <h3>Communication</h3> <ul style="list-style-type: none"> <li>Call list</li> <li>Noise suppression</li> <li>Polyphonic ringtones</li> <li>Speakerphone</li> <li>Slow talk</li> <li>Talk equaliser</li> <li>Voice enhancement</li> </ul>	 <h3>Messaging</h3> <ul style="list-style-type: none"> <li>Conversations</li> <li>Email</li> <li>Handwriting recognition</li> <li>Instant messaging</li> <li>Multimedia messaging (MMS)</li> <li>One handed keyboard</li> <li>Predictive text input</li> <li>Sound recorder</li> <li>Text messaging (SMS)</li> </ul>	 <h3>Design</h3> <ul style="list-style-type: none"> <li>Answering machine</li> <li>Auto rotation</li> <li>Content Adaptive Backlight Control (CABC)</li> <li>Direct touch</li> <li>Face Unlock</li> <li>Gesture input</li> <li>On-screen QWERTY keyboard</li> <li>Battery STAMINA mode</li> <li>Screenshot capturing</li> <li>Throw</li> <li>Torch Screen</li> <li>Touch screen</li> <li>Theme</li> <li>Voice input</li> <li>Wallpaper</li> </ul>
 <h3>Entertainment</h3> <ul style="list-style-type: none"> <li>Media browser</li> <li>Motion gaming</li> <li>Radio (FM radio with RDS)</li> <li>Reader mode</li> <li>SensMe™ slideshow</li> <li>Sony Entertainment Network*</li> <li>Video streaming</li> </ul>	 <h3>Organiser</h3> <ul style="list-style-type: none"> <li>Airplane mode</li> <li>Alarm clock</li> <li>Calculator</li> <li>Contacts</li> <li>Document readers</li> <li>Lunar calendar</li> <li>Setup guide</li> <li>Stopwatch</li> <li>Tasks</li> <li>Timer</li> </ul>	 <h3>Connectivity</h3> <ul style="list-style-type: none"> <li>3.5 mm audio jack (CTIA)</li> <li>ANT+™ sport, fitness, health support</li> <li>aGPS*</li> <li>Bluetooth® 4.0 wireless technology</li> <li>DLNA Certified®</li> <li>GLONASS*</li> <li>Media Go™</li> <li>Media Transfer Protocol support</li> <li>Micro USB support</li> <li>Native USB tethering</li> <li>NFC</li> <li>PC Companion</li> <li>Screen mirroring</li> <li>Smart Connect</li> <li>Microsoft® Exchange</li> <li>ActiveSync®</li> <li>Synchronisation via SyncML™</li> <li>USB charging</li> <li>USB High speed 2.0 support</li> <li>WAPI</li> <li>WAPI Direct</li> <li>WAPI Hotspot functionality</li> </ul>

\* This service is not available in all markets.

\*\* This feature is only available when you play music using the Walkman® application.

# Technologies in detail

**NOTE:** The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

## Device-to-device communications (local)

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### ANT+™ wireless technology

Connectable devices	ANT+™ devices require the download of a supporting application
Frequency band	2.4 GHz
Data transfer rate	Up to 60 Kbps
Encryption	AES-128
Topologies	One to Many, Many to One, Peer to Peer, Star, Practical Mesh

## Bluetooth® wireless technology

Bluetooth® profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.3 Device Identification Profile v1.3 Generic Attribute Profile Client/Server over LE Handsfree Profile v1.6 (Wide band speech) Headset Profile v1.2 Health Device Profile v1.1 Human Interface Device Profile, Host role v1.1 Messaging Access Profile v1.0 Object Push Profile v1.1 Personal Area Networking Profile v1.0 Phonebook Access Profile v1.1 Serial Port Profile v1.1
Core version and supported core features	Version 4.0
Other supported features	aptX® CD quality audio streaming over Bluetooth®
Connectable devices	Products support at least one of the Bluetooth® profiles listed above. Bluetooth® 4.0 accessories generally require installation of a supporting application.

More information:

[www.sonymobile.com/developer](http://www.sonymobile.com/developer)

[www.bluetooth.com](http://www.bluetooth.com)

## WAPI

Supported standards	IEEE 802.11b/g/n and WLAN WLAN Direct, WLAN Protected Setup
Connectable devices	WLAN access points WLAN Direct compatible devices
Frequency band	2.4 GHz
Data transfer rate	Up to 72.2 Mbit/s
Security	Open Authentication Shared Authentication EAP-SIM EAP-AKA EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP 64 bit, WEP 128 bit, TKIP and CCMP (AES)
Power save	WMM-UAPSD
QoS	WMM

## DLNA Certified® (Digital Living Network Alliance)

Supported Device Classes	<p>M-DMS – Mobile Digital Media Server            Media Types: images, music and video            Summary: The digital media server exposes the media files in your device to a WLAN network. The files can then be accessed from other DLNA Certified® clients.</p> <p>+PU+            Media Types: image, video and music            Summary: You can play media in your device on another device, such as a TV or a PC using 2 box push technology. +PU+ is integrated in the Album, Movies and Walkman® applications.</p> <p>M-DMP – Mobile Digital Media Player            Media Types: image, video and music            Summary: You can play content stored on another device, for example, a server or a PC, directly on your device.</p> <p>+DN+            Media Types: video and music            Summary: You can download content stored on another device, for example, a server or a PC, and play the downloaded content directly on your device.</p>
Supported Bearers	WLAN WLAN Direct
DRM Support	The DLNA Certified® implementation does not support DRM-protected content.

# Messaging

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## MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

### Email

Bearer type (IP)	GPRS, EGPRS, UMTS, LTE
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese US-ASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS
HTML mail	Yes (read only)

More information:

[www.sonymobile.com/developer](http://www.sonymobile.com/developer)

[www.openmobilealliance.org](http://www.openmobilealliance.org)

## Positioning – location based services

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Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0 & v2.0
- 3GPP™ Control Plane location (incl. Emergency location)
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS\*

\* NOTE: GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API (referred to as "GPS Provider" in Android terminology).

## Provisioning (OMA CP)

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OMA CP version 1.1

## Multimedia (audio, image and video)

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<b>Audio Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MP3	MP3 (.mp3)
	AAC (AAC-LC, AAC+, eAAC+)	3GPP (.3gp, .3gpp, mnv), MP4 (.mp4, .m4a), ADTS (.aac)
	AMR-NB, AMR-WB	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a), AMR (.amr, .awb)
	MIDI	SMF (.mid), XMF (.xmf), Mobile XMF (.mxmf), OTA (.ota), RTTTL (.rtttl), RTX (.rtx), iMelody (imy)
	PCM	WAV (.wav)
	Vorbis	OGG (.ogg)
	FLAC	FLAC (.flac)
<b>Audio Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	AMR (AMR-NB, AMR-WB)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a) AMR (.amr)
	AAC (AAC-LC)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a)
<b>Image Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	Windows bitmap	BMP (.bmp)
	GIF	GIF (.gif)
	JPEG	JPEG (.jpg, .jpeg)
	PNG	PNG (.png)
	BMP	BMP (.bmp)
	WebP	WebP (.webp)
<b>Image Capture</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	JPEG	JPEG (.jpg)

<b>Video Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MPEG-4	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v) Matroska (.mkv), AVI (.avi), Xvid (.xvid)
	H.265*	MP4 (.mp4, .m4v)
	H.264	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v) Matroska (.mkv)
	H.263	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v)
	VP8	Webm (.webm, .mkv)
<b>Video Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	H.264	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v), Video Unlimited (.mnv)
	H.263	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v)
	MPEG-4	3GPP (.3gp), MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	RTSP HTTP progressive download HLS
<b>DRM</b>	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM v1.0 Marlin DRM Widevine Level 3 PlayReady DRM (available in specific regions)

\* NOTE: H.265 is not available in all markets.

## Synchronisation (OMA DS, EAS)

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OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Microsoft® Exchange ActiveSync® protocol version 14

Microsoft® Exchange ActiveSync® protocol version 14.1

Related information:

[www.sonymobile.com/developer](http://www.sonymobile.com/developer)

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